

Abstract

Semiconductor substrate is disclosed having quantum wells having first bandgap, and quantum wells having second bandgap less than second bandgap. Semiconductor structure is disclosed comprising substrate having quantum wells having given bandgap, other quantum wells modified to bandgap greater than given bandgap. Semiconductor substrate is disclosed comprising wafer having quantum wells, section of first bandgap, and section of second bandgap greater than first bandgap. Method for forming semiconductor substrate is provided, comprising providing wafer having given bandgap, depositing dielectric cap on portion and rapid thermal annealing to tuned bandgap greater than given bandgap. Semiconductor structure is disclosed comprising substrate having quantum wells modified by depositing cap and rapid thermal annealing to tuned bandgap greater than given bandgap. Method for forming semiconductor substrate is disclosed, comprising providing wafer having quantum wells having given bandgap, depositing cap on portion and rapid thermal annealing to tuned bandgap greater than given bandgap.

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